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***Agave victoriae-reginae* and its close relatives**

Colin C Walker

Agave victoriae-reginae is justifiably popular as a beautiful architectural plant. There are, however, similar, closely related species, notably *A. nickelsiae* (formerly known as *A. ferdinandi-regis*) and the recently described (hence unfamiliar) *A. pintilla* which are equally beautiful. All three species are discussed both in cultivation and in habitat. Photos by the author and as otherwise indicated.

Introducing *Agave victoriae-reginae*

A. victoriae-reginae is a well-known and deservedly popular species. After *A. americana* it is probably the commonest, horticulturally most interesting species of this large genus in cultivation, so hardly needs an introduction.

It has been in cultivation since the latter half of the 19th century. It was first described by Moore (1875) who, writing in October of that year said, "This remarkably distinct species of *Agave* was first seen in public at the International Exhibition held at Cologne in September last, and was alluded to by us... in our



Fig. 1 The first published image of *A. victoriae-reginae* from Moore, 1875 (later reprinted in Engelmann, 1880)



Fig. 2 *Agave victoriae-reginae* in habitat in the Cañon el Potrerrito (the Potrerrito Canyon), Nuevo León, Mexico, growing in association with opuntias (Photo: Zlatko Janeba)

report of that meeting as ‘a most charming new *Agave*’, shown by M L De Smet of Ghent, and having more the aspect of a *Leuchtenbergia* than of an *Agave*. The entire stock of the plant, which was very limited, has been secured for his unique collection by J T Peacock,

Esq of Sudbury House, Hammersmith, by whom the largest plant, which measures about 16 inches across, was exhibited at the October meeting of the Floral Committee. On this occasion it received the unanimous award of a First Class Certificate, and was recommended to be especially marked by the decoration of a gold medal. Probably the specimen exhibited was not fully grown, but still the plant does appear to be one of large size” (Fig. 1).

Regarding the name of this species, Moore went on to say that, “We have already mentioned that the name adopted by Mr Peacock has been given by the express permission of Her Majesty the Queen”. Hence it was described as *Agave victoriae-reginae*.

***Agave victoriae-reginae* in habitat**

In habitat this species is as stunningly beautiful as it is in cultivation, a feature that is not always the case, since many succulents look rather ragged in the wild, whereas in contrast careful cultivation can greatly



Fig. 3 Close up view of a single rosette of *A. victoriae-reginae* in the Cañon el Potrerrito. (Photo: Zlatko Janeba)



Fig. 4 *Agave victoriae-reginae* in habitat in the Cañon de la Huasteca (the Huasteca Canyon), Nuevo León, Mexico, growing in association with another unidentified *Agave* sp. (Photo: Trevor Wray)

improve their appearance. Starr (2012) describes *A. victoriae-reginae* as, “a Chihuahuan Desert species found in a few yet widely separated localities”. It has a reasonably widespread distribution, occurring in the Mexican states of Coahuila, Durango and Nuevo León (Gentry, 1982; Starr, 2012). It is illustrated here in habitat at two locations fairly close together in the State of Nuevo León (Figs. 2–5). Of these, its most famous location is in the Huasteca Canyon (Figs. 4–5) where it occurs “by the tens of thousands”.

Interestingly, *A. victoriae-reginae* grows in very close association (sympatrically) with other species of *Agave*. In the Cañon de la Huasteca (the Huasteca Canyon), Nuevo León, it grows together with the unique *Agave albopilosa* and *A. bracteosa*, although to my knowledge, as yet, no intermediate hybrids between any of these three species have been observed and recorded. In the same canyon it also grows sympatrically with another as yet unidentified *Agave* (Fig. 4).

***Agave victoriae-reginae* in cultivation**

Agave victoriae-reginae easily justifies its popularity, being probably the most common *Agave* grown for its architectural good looks (Figs. 6–8), as opposed to *Agave sisalana* and *A. tequilana* that are raised commercially in vast numbers for the production of



Fig. 5 Close up view of a single rosette of *A. victoriae-reginae* in the Cañon de la Huasteca (Photo: Trevor Wray)



Fig. 6 *Agave victoriae-reginae* in cultivation at about 20 years old, showing the wonderful symmetry of this iconic species

sisal and tequila. In my experience *A. victoriae-reginae* is relatively slow growing in pot culture, which I consider to be another feature of its attractiveness, compared to other faster-growing species that require a lot of space quite quickly. It is not unsurprisingly quite a variable species, as illustrated by the three different plants shown in Fig. 7. Breitung (1968) recognised and formally named six new forms. For example, the plant shown bottom right in Fig. 7 is close to what Breitung described as *A. victoriae-reginae* f. *ornata*. These forms were accepted by Gentry (1982) but not by Thiede (2001). Another general feature of *A. victoriae-reginae* in my experience in pot culture is that these plants generally do not offset, although there are a few clumping clones in cultivation.

As a consequence of its slow growth in pots, this species takes a long time to reach maturity, flowering age and size. In 2015 my old specimen finally flowered (Figs. 8–12). This plant had been in my collection for 25 years, so I estimated it to be around 30 years old at



Fig. 7 (above right) Three specimens showing the variation in *A. victoriae-reginae*. The largest plant is about 25 years old and is 45cm diameter, growing in a 35cm diameter pot. Plants formerly in the collection of David Kirkbright

Fig. 8 (right) The start of flowering of my 30 year old specimen of *A. victoriae-reginae* on 16 May 2015





flowering. In May I noticed the flower spike starting to emerge from the centre of the rosette in the greenhouse, so the plant was hastily moved outdoors, albeit with some difficulty, so that growth of the inflorescence would not be impeded by the greenhouse glass. The sequence of flowering is shown in Figs. 8–12. Initially the flower spike grew fast and on a single day I recorded a growth rate of 20cm over 24 hours! It reached a maximum height of 1.8m and it took four months from initiation of the spike to the opening of the first flowers (Fig. 8 to Fig. 10). This species is a member of subgenus *Littaea* (formerly the distinct genus *Littaea* Tagliabue, dating from 1816), characterised by non-branching flower spikes shown clearly in Figs. 9 to 12, (this contrasts with *Agave* subgenus *Agave*, typified by *A. americana*, which has large, branched inflorescences.) In *A. victoriae-reginae* the flowers are arranged in clusters of 2–3 flowers, ie pairs or triads on short, forked, stout pedicels, as shown in Fig. 9. Being a single unbranched rosette this

Above from left:

Fig. 9 *A. victoriae-reginae* in bud on 19 July 2015

Fig. 10 The first open flowers of *A. victoriae-reginae* on 10 August 2015

Fig. 11 The peak flowering of *A. victoriae-reginae* on 13 August 2015

Fig. 12 (right) For scale, the author with *A. victoriae-reginae* on 16 August 2015 (Photo: Marjorie Thorburn)



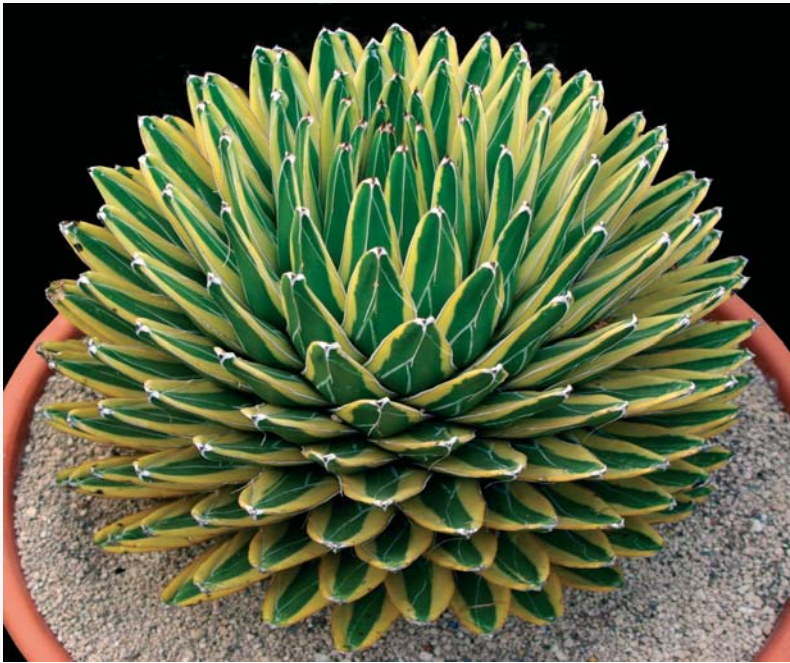


Fig. 13 (left) *Agave victoriae-reginae* 'Kizan' in the collection of Cok Grootsoolten, Honselersdijk, The Netherlands, during the 40th Scottish Continental Tour (Photo: David Kirkbright)

plant died after flowering, although death took many months. The plant ended its life in a blaze of glory, but it was sad to lose a 30 year old specimen. However, replacements were to hand, especially thanks to David Kirkbright (Fig. 7).

A recent trend in *Agave* cultivation has been the appearance of a wide range of variegates of the smaller-growing species: a good range of these is illustrated by Pilbeam (2013) in his attractively illustrated *Gallery of Agaves*. Many of these have been produced and propagated in Asia, are attached to names that are often difficult to spell or pronounce, and also often come with hefty price tags! A prime target for the production of attractive variegates has of course been *A. victoriae-reginae*. Two of these cultivars are illustrated here. 'Kizan' (Fig. 13) has attractive yellow-edging to the otherwise green central leaves. Even more stunning is 'Hyon Zan' (Fig. 14) with white striped marginal variegation. These are just two examples of the newly produced cultivars; the meaning of their

names, though, currently escapes me! I am sure that the owners of such beautiful and no doubt expensive plants will not want these to flower!

Relatives of *Agave victoriae-reginae*

However, *A. victoriae-reginae* is far from unusual within the genus and indeed there are some recently described, or at least renamed, look-alikes. The first of these, *Agave nickelsiae*, is another really attractive species that has a long and confused history that will only be briefly summarised here. It was apparently first discovered by Anna B Nickels, a Texan cactus nurserywoman (Mitich, 1971) after whom, for example, *Coryphantha nickelsiae* (K.Brandegee) Britton & Rose was also named. Nickels (c.1894) was the first to publish an illustration of this

new *Agave*. She included a black and white photo labelled with the caption: "*Agave nickelsii*. This *Agave* is similar in appearance to *A. Victoria Regina*, except that it is of much more robust growth, the leaves being



Fig. 14 *Agave victoriae-reginae* 'Hyon Zan'. (Photo: Tina Wardhaugh)



Fig. 15 For comparison, *A. victoriae-reginae* (left) and *A. nickelsiae* (right) on display at the BCSS Zone 6 Show, Kettering, 2009 with Derek Bowdery (left) and Mike Stansbie officiating (Photo: Trevor Wray)

thicker and the white markings on same being broader and more distinct". It was marketed at \$1.00 to \$5.00. This was later named *Agave nickelsi* in her honour (Roland-Gosselin, 1895). This name languished in obscurity, but later became *A. victoriae-reginae* f. *nickelsi* (Trelease, 1920). Meanwhile Berger (1915) took a different approach, abandoning the name *A. nickelsi* and renaming this species *A. ferdinandi-regis* Berger. This latter name is still often encountered in cultivation, as a species distinct from *A. victoriae-reginae*.



Fig. 16 For comparison, *A. nickelsiae* (left) and *A. victoriae-reginae* (right). Plants formerly in the collection of David Kirkbright

The most recent reassessment of this group of species has been by a team of Mexican botanists (González-Elizondo et al., 2011). They recognise this old species as *A. nickelsiae* Roland-Gosselin (note the correction to the termination of this name). *Agave ferdinandi-regis* and *A. victoriae-reginae* var. *laxior* Berger are both synonyms. In summary, after a very long gestation, Anna Nickels's *Agave* is now recognised as a distinct and beautifully architectural species in its own right, albeit closely related to the old familiar *A. victoriae-reginae*.

To enable comparison of the two species, plants of each are shown in Figs. 15 & 16, whilst a single specimen of *A. nickelsiae* is also shown in Fig. 17. As indicated in Nickel's catalogue (Nickels, c. 1894) this species is distinguished from *A. victoriae-reginae* by having fewer more bulky leaves, up to 9cm wide at the base, triangular in cross section and up to 20cm long in a large specimen. It has prominent chalky



Fig. 17 *Agave nickelsiae*. For scale, the plant is about 35cm diameter in a 29cm diameter pot

white markings up to 4mm wide, the white lines being continuous or broken up and irregularly arranged. The black leaf tip is up to 1.5cm long with three short spines and a more prominent central spine up to 1cm long.

Agave nickelsiae is a micro endemic which, according to Starr (2012) "is restricted to southeastern Coahuila, northeast of Saltillo". There it grows sympatrically with both *A. asperrima* and *A. lechuguilla* and hybridises with both these species. The hybrid *A. asperrima* × *nickelsiae* was first recorded by Gentry (1967) but under different names. In

Gentry (1982: 183, Fig. 7.44) this is recorded as a cross between *A. scabra* growing with *A. victoriae-reginae* east of Saltillo, Coahuila. It now transpires that both these identifications are wrong. His *Agave scabra* is now known as *A. asperima* (Thiede, 2001), whilst his *A. victoriae-reginae* is now recognised as *A. nickelsiae*. The cultivar *Agave* 'Sharkskin' closely resembles some of the natural hybrids *A. asperima* × *nickelsiae*.

Gentry (1982) also records hybrids between what is now recognised as *A. nickelsiae* and the widespread *A. lechuguilla*. One product of such hybridisation appears to be the currently popular cultivar *Agave* 'Pumila' (Fig. 18). This plant grows very slowly in pot culture and only achieves its full potential when grown bedded out with unrestricted root room. As far as I am aware there are no flowering records for *A. 'Pumila'*, suggesting that this is a sterile hybrid. The correct parentage for this cultivar should now be given as *A. lechuguilla* × *nickelsiae*, or possibly *A. asperima* × *nickelsiae*, but the former seems more likely to be correct to me.

Finally for now, González-Elizondo et al (2011) recognise two other significant taxa in this group: *A. victoriae-reginae* subsp. *swobodae* Halda (2000), along with their newly described species *A. pintilla* S. González, M. González & L. Reséndiz. The latter is the most westerly distributed in the group, restricted to south-east Durango and is illustrated by Pilbeam (2013: 172, Fig. 198). The hybrid *A. pintilla* × *A. salmiana* subsp. *crassipina* is also newly recorded. All of these are very attractive sculptural plants. I have seedlings of *A. pintilla* in cultivation but have never seen *A. victoriae-reginae* subsp. *swobodae*, so it is too early to report on the relative desirability of these recent additions to this stunningly beautiful group of agaves.

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Fig. 18 *Agave* 'Pumila' (*Agave lechuguilla* × *nickelsiae*), photographed in the reserve collection at Kew

LITERATURE:

- Berger, A (1915) *Die Agaven. Beiträge zu einer monographie.* Gustav Fischer Verlag, Jena.
- Breitung, A J (1968) *The Agaves. The Cactus and Succulent Journal 1968 Yearbook.* Reprinted from the *Cactus & Succulent Journal of America* and published by Abbey Garden Press, Reseda, California.
- Engelmann, G (1880) *Agave (Littaea) victoriae-reginae*, T. Moore. *Gard. Chron.* n.s. 13: 788.
- Gentry, H S (1967) Putative hybrids in *Agave*. *J. Heredity* 58: 32–36.
- (1982) *Agaves of continental North America.* University of Arizona Press, Tucson.
- González-Elizondo, M S, González-Elizondo, M, López-Enríquez, I L, Reséndiz-Rojas, L, Tena-Flores, J A & Retana-Rentería, F I (2011) El complejo *Agave victoriae-reginae* (Agavaceae). *Acta Bot. Mex.* 95: 65–94.
- Halda, J J (2000) *Agave victoriae-reginae* subsp. *swobodae*. *Acta Mus. Richnov. Sect. Nat.* 7(2): 71.
- Mitich, L W (1971) Anna B Nickels - pioneer Texas cactophile. *Cact. Succ. J. (US)* 43: 209–212, 259–263.
- Moore, T (1875) New garden plants. *Agave victoriae reginae* sp.n. *Gard. Chron.* n.s. 4: 484, 485.
- Nickels, A B (n.d., c.1894) *Arcadia Gardens catalogue and price list of cactuses and other Texan and Mexican plants.* Index Printing & Publishing Co., Detroit, Michigan.
- Pilbeam, J (2013) *A gallery of Agaves (including variegates).* The British Cactus & Succulent Society, Hornchurch, Essex.
- Roland-Gosselin, R (1895) *Agave nickelsi*. *Rev. Hort. [Paris]*. 67: 579.
- Starr, G (2012) *Agaves. Living sculptures for landscapes and containers.* Timber Press, Portland, Oregon/London.
- Thiede, J (2001) *Agave* in Egli, U. (ed.) *Illustrated Handbook of succulent plants. Monocotyledons.* Springer-Verlag, Heidelberg, etc., pp.6–76.
- Trelease, W (1920) *Agave*. In Standley, P.C. (ed.). *Trees and shrubs of Mexico. Contr. U.S. Nat. Herb.* 23: 107–142.

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